JOSÉ RIZAL UNIVERSITY
COLLEGE OF HOSPITALITY AND TOURISM MANAGEMENT

MODULE 2 / WEEK 2

ERGONOMICS IN THE WORKPLACE

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ERGONOMICS

- Best known as **HUMAN ENGINEERING**
- Is an applied science that involves the characteristics of people and designing and assigning their activities so that they are done in the safest and most efficient manner

OVERVIEW

- Derived from the Greek words

  "**NOMOI**" – natural laws
  "**ERGON**" – work

- The study of human capabilities in relation to work demand
- The science of making the work environment fit for the worker

OVERVIEW

- By understanding the human factor requirement of work, we can avoid work-related injuries
- An ergonomically designed space can increase productivity and efficiency while reducing stress and fatigue

TYPES of ERGONOMICS:

- PHYSICAL Ergonomics – it is the human body's response to physical and physiological work loads

TYPES of ERGONOMICS:

What is Physical Ergonomics?

"Physical ergonomics is about the human body's responses to physical and physiological work demands. Repetitive strain injuries from repetition, vibration, force, and posture are the most common types of issues, and thus have design implications."

TYPES of ERGONOMICS:

- **COGNITIVE** Ergonomics – it deals with the mental processes such as perception, memory, reasoning, motor response and capabilities of humans when at work

TYPES of ERGONOMICS:

Cognitive ergonomics studies cognition in work & operational settings, in order to optimize human well-being & system performance.

1. Diagnosis
2. Workload
3. Situation awareness
4. Decision making
5. Planning

TYPES of ERGONOMICS:

- **ORGANIZATIONAL**
  Ergonomics – it deals with the organizational structure, policies and processes in the work environment

TYPES of ERGONOMICS:

ORGANIZATIONAL ERGONOMICS:

- Also known as **macroergonomics** is concerned with the optimization of sociotechnical systems, including their organizational structures, policies and processes.
- **Relevant topics:**
  - Shift work
  - Scheduling
  - Job satisfaction
  - Supervision
  - Teamwork

OVERVIEW

- A mismatch between the physical requirements of the job and the physical capacity of the worker can result in Repetitive Stress Injuries (RSI's) as well as other Cummulative Trauma Disorders (CTD's)

OVERVIEW

- In the 1990's, the U.S. Occupational Safety and Health Administration (OSHA) required some employees to use an ergonomics program to change the conditions that contribute to MUSCULOSKELETAL DISORDERS (MSD's) such a carpal tunnel, back pain and tendonitis

ERGONOMIC Injuries (MSD's):

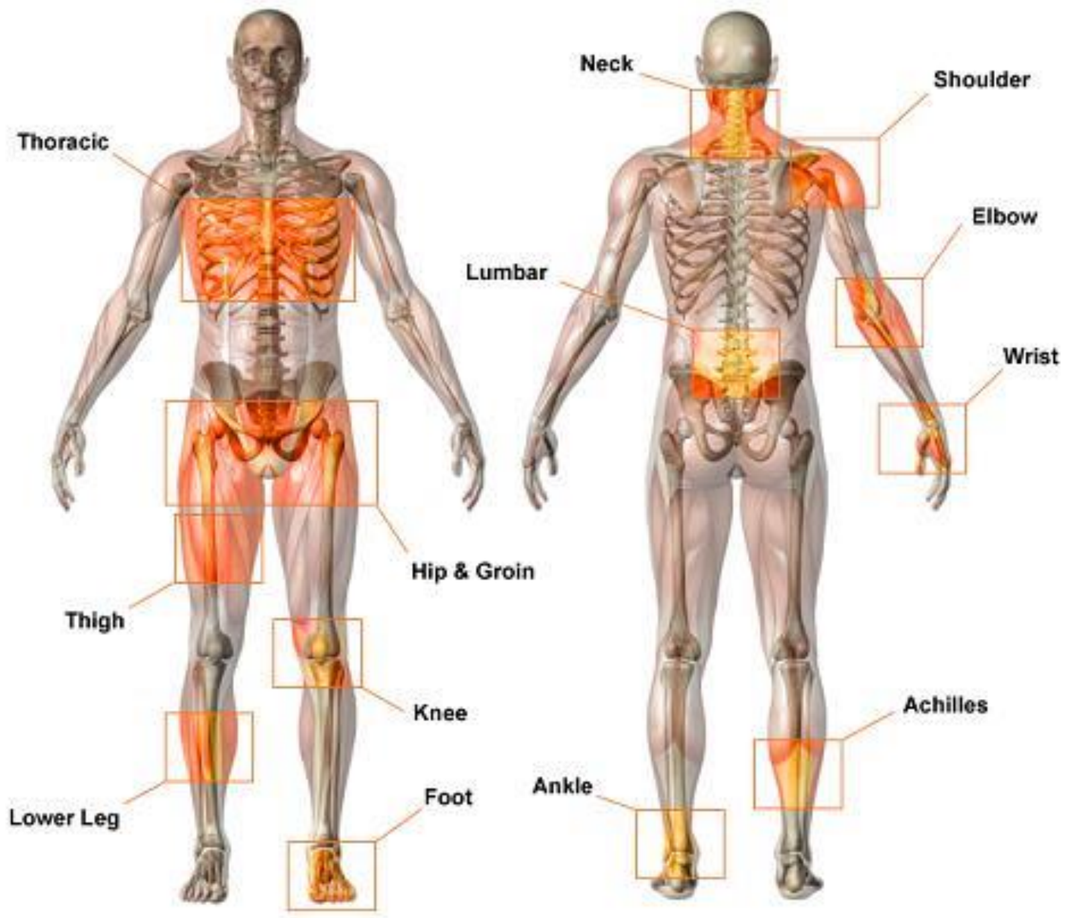
MUSCULOSKELETAL DISORDERS (**MSD's**)

are injuries or disorders of the muscles, nerves, tendons, joints, cartilage, and spinal discs caused by sustained exposure to stresses or repetitive motions.

- Cummulative Trauma Disorders(**CTD**'s) – exposure driven
- Strains and Sprains – event driven

Body Parts to Workplace MSD's:

- Back – lower
- Neck and Upper back
- Upper Extremities – arms and hands
- Lower Extremities – legs and feet



Cummulative Trauma Disorders (CTD's):

- Tendon Disorders – inflammation of the tendon and/or tendon sheathing caused by repeated rubbing against ligaments, bones, etc.
- Lateral Epicondylitis (tennis elbow)

Cummulative Trauma Disorders (CTD's):

- Nerve Disorders – compression of nerves from repeated or sustained exposure to sharp edges, bones, ligaments and/or tendons
- Carpal Tunnel Syndrome

Cummulative Trauma Disorders (CTD's):

- Neurovascular Disorders – compression blood vessels and/or nerves from repeated exposure to vibrations or cold temperatures
- Reynauds phenomenon (white finger syndrome)

Strains or Sprains:

- Connective tissue injury caused by single forceful event such as lifting heavy objects in awkward positions
- Common to large body segments such as back, legs and shoulders

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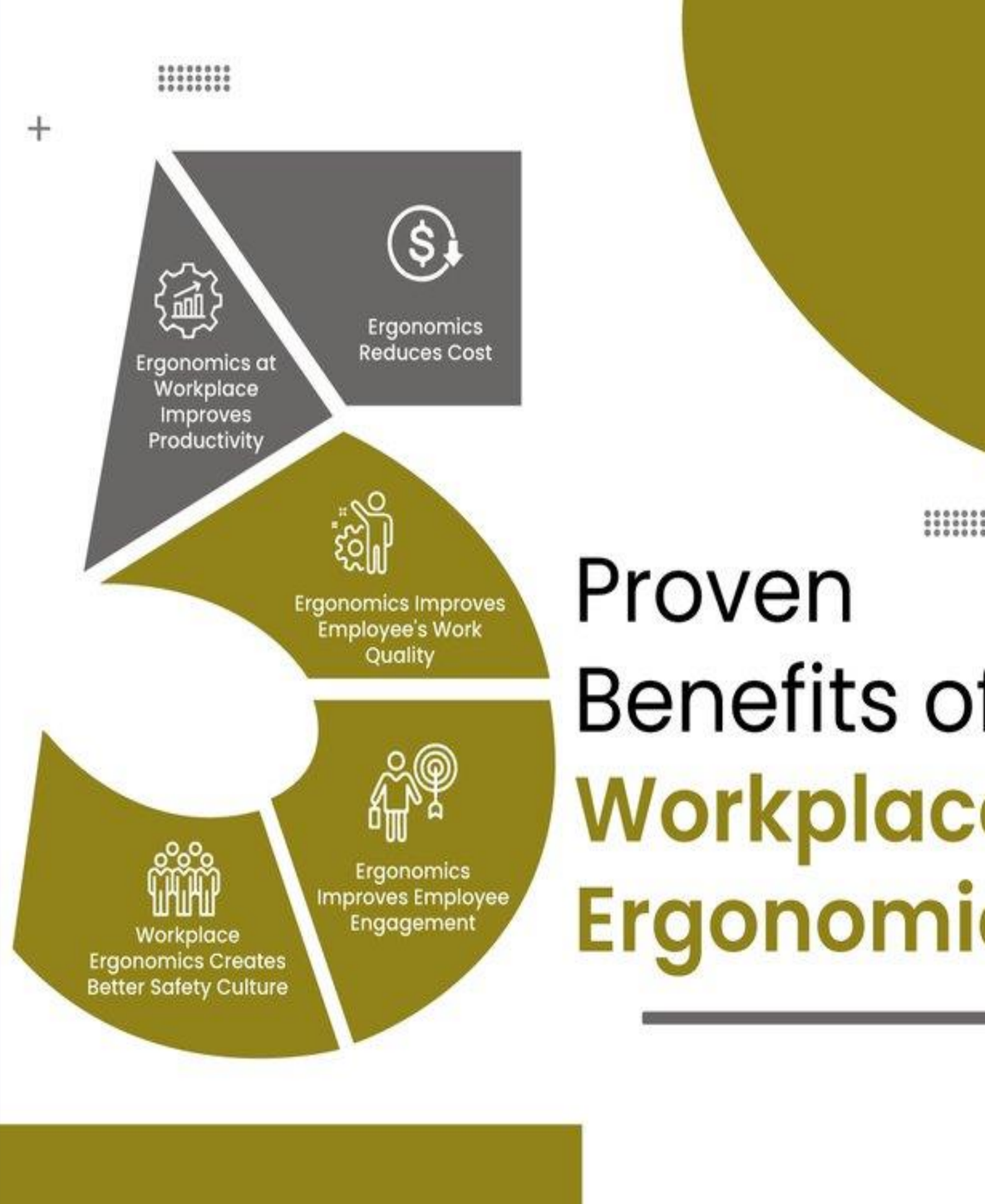
BENEFITS of ERGONOMICS



BENEFITS of Ergonomics in the Workplace:

1. **Reduce Cost**
   – on employees availing of medical compensations attributed to MSD's
   – the cost of producing a piece of work does not increase because there is no need to replace a worker and train a new one

BENEFITS of Ergonomics in the Workplace:

2. **Improves Productivity**
   – by designing a job to allow for good posture, less exertion, fewer motion and better heights and reaches, the workstation becomes efficient

BENEFITS of Ergonomics in the Workplace:

3. **Improves Quality**
   – poor ergonomics leads to frustrated employees that don't do their best at work

BENEFITS of Ergonomics in the Workplace:

4. Improves Employee Engagement

– if employees does not feel fatigued or discomfort, it can reduce turnover, decrease absenteeism, improve morale, and increase employee involvement

BENEFITS of Ergonomics in the Workplace:

5. **Safety Culture**
   – creating and fostering the safety and health culture at your company will lead to better human performance for your organization

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STRESSORS in the Workplace

BENEFITS of Ergonomics in the Workplace:

- Many items found in the work environment can create potential risks and hazards if their locations and uses are not considered carefully.

BENEFITS of Ergonomics in the Workplace:

- These hazards are environmental and should be given attention for safety and control

Stressors in the Workplace include:

- **WORKSTATION DESIGN**
  improper placement of equipment and materials that can result in worker strain and discomfort

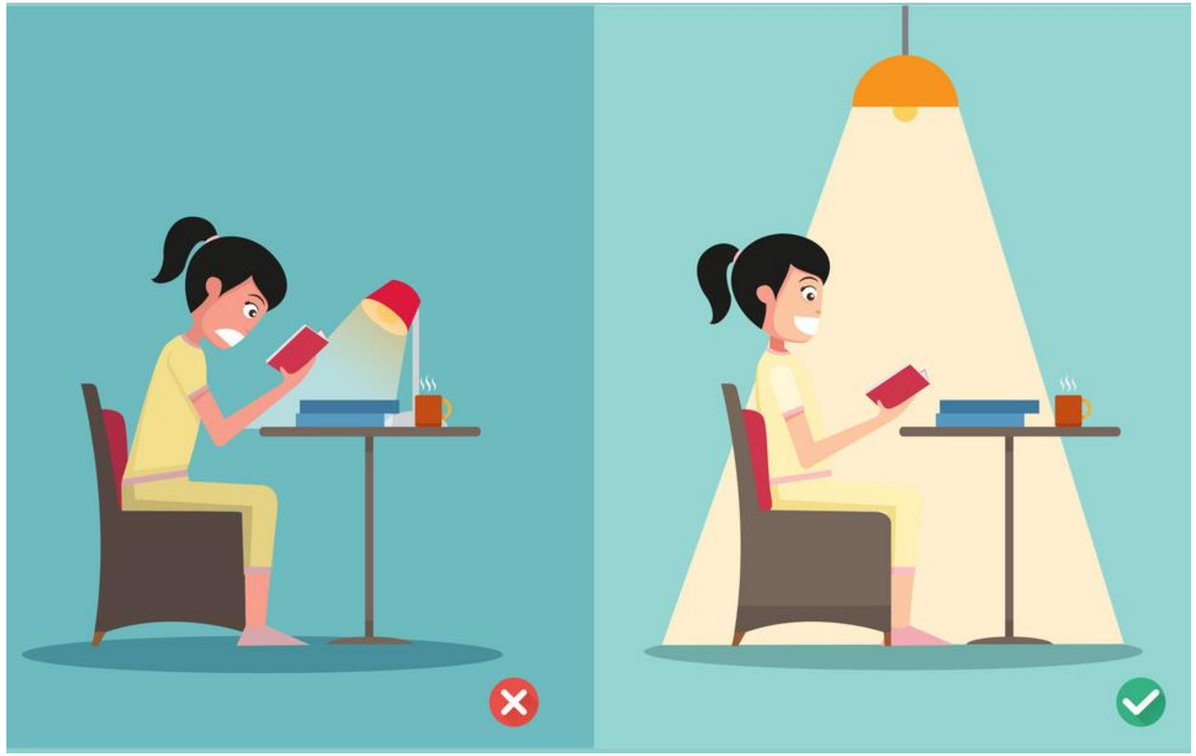
Stressors in the Workplace include:

- **WORKSTATION FURNISHING** furniture must be carefully selected to provide the most flexibility and adaptability for workers

Stressors in the Workplace include:

- **LIGHTING**

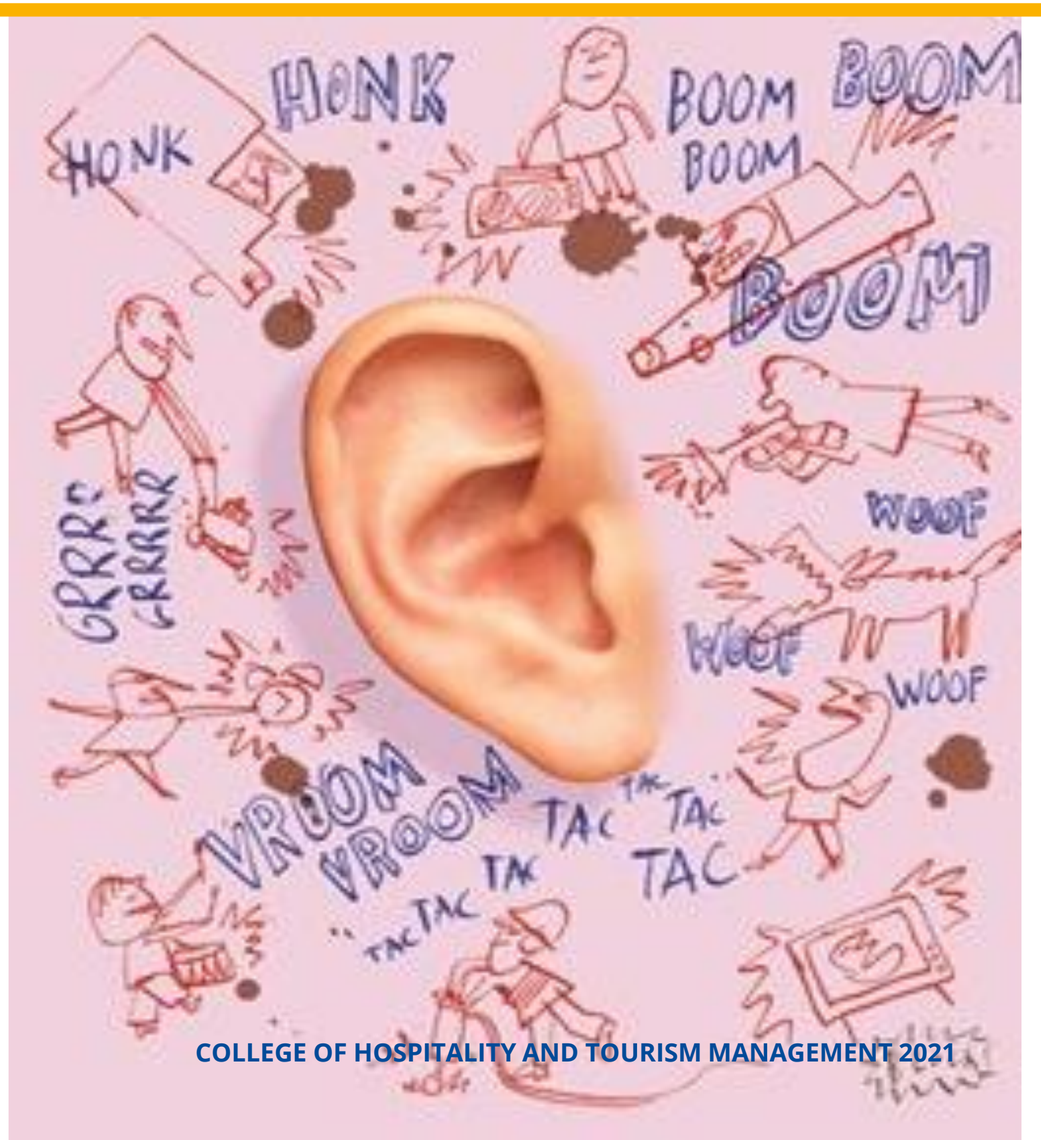
  Light sources should be chosen to reduce glare and improve the contrast on working surfaces



Stressors in the Workplace include:

- **NOISE**

  Noises in the workplace can adversely affect the quality of the work environment



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ERGONOMICS & FACILITIES MANAGEMENT

SUMMARY:

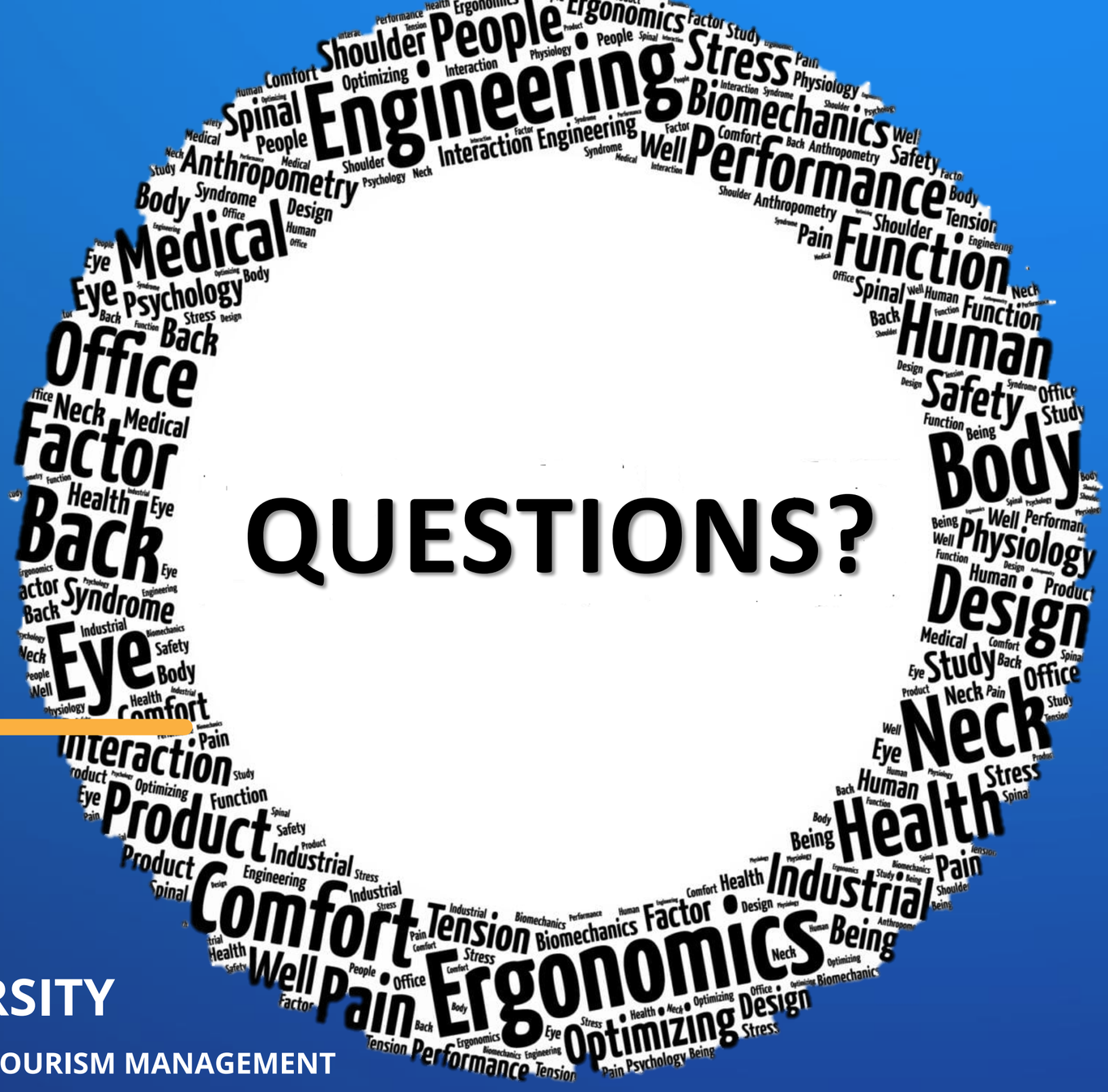
- Ergonomics should be a preventive strategy for management
- The goal of an Ergonomics Program is to protect jobs and to guard against liability.

SUMMARY:

- Facility managers must collaborate with tenants, designers, and vendors to include ergonomics in workplace designs
- Collaboration should be employed when attempting to balance costs, technologies, and the needs of the workers

SUMMARY:

- All involved should try to provide adaptable and flexible environments that also meet production and safety objectives



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